



Australian Government

Australian Centre for
International Agricultural Research

Forestry

Teak-based agroforestry systems to enhance and diversify smallholder livelihoods in Luang Prabang province of Lao PDR



Overview

Lao PDR is one of the poorest countries in southeast Asia. Teak produces a high-value timber that is in strong demand both nationally and internationally.

Approximately 25 per cent of the population lives on less than US\$1 per day. Some of the poorest districts are in the upland areas of northern Laos, where communities face food insecurity and rely on the natural forests to supplement food supply and family income.

The Laos Government has provided various incentives to establish teak woodlots, typically on shifting cultivation fields. Smallholder teak is now a significant component of the landscape in this region, especially in Luang Prabang province, with an estimated planted area of 15,000 ha.

When incorporated into smallholder farming systems teak can provide substantial economic benefits; however, current teak management systems typically do not generate any income until approximately 12-15 years after planting. Those smallholders most likely to retain their woodlots until maturity typically have alternative livelihoods to upland cropping. But many smallholders cannot take advantage of the longer-term economic benefits of growing teak, as they don't have sufficient land or alternative income sources prior to the trees reaching harvesting age.

KEY FACTS

ACIAR Project No. FST/2012/041

Duration: July 2013 to June 2019 (6 years)

Target areas: Lao PDR

Budget: AU\$1,660,624

Project Leader

Assoc Prof Mark Dieters

The University of Queensland

Key partners

- Upland Agriculture Research Center
- Rice Research Center
- Souphanouvong University
- Northern Agriculture and Forestry College

ACIAR Research Program Manager

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Research/Objective

The project's overall aim is to identify and quantify the potential economic, social and environmental benefits of teak-based agroforestry systems in the upland regions of northern Laos.

The specific objectives are to:

- ◆ Understand the impacts of spacing and thinning on the productivity and value of teak and companion crops, in teak-based agroforestry systems.
- ◆ Develop options for diverse teak-based agroforestry systems involving native non-timber forest products, crops and production of fodder for livestock.
- ◆ Facilitate the adoption of viable teak-based agroforestry systems through the development of improved genetic resources.

Expected scientific results

- ◆ Improved growth models for well managed teak woodlots up to 20 years of age.
- ◆ Quantified impacts of pre-commercial thinning on the growth teak woodlots aged 8-12 years of age.
- ◆ Evaluation of economic benefits from pre-commercial thinning in teak woodlots compared with management systems involving only commercial thinning.
- ◆ Understanding of the importance of interactions between tree spacing and performance of companion crops across a range of sites in Luang Prabang province when grown in teak-based agroforestry systems.
- ◆ Documentation of market chains for three key non-timber forest products—paper mulberry, broom grass and incense tree.
- ◆ Knowledge of the returns to labour and land inputs for teak-based agroforestry systems compared with teak woodlots.
- ◆ Diversity of plantation teak in Luang Prabang quantified through genetic diversity analysis of selected and natural populations of teak.
- ◆ Assessment of the phenotypic variation in teak, broom grass, paper mulberry and bong tree.
- ◆ Selected and propagated elite clones of teak.
- ◆ Improved seed of teak generated through the establishment of clonal seed orchard.

Expected outcomes

- ◆ Improved uptake of teak-based agroforestry systems by smallholders in northern Laos, with potential to boost productivity and yield significant economic benefits.
- ◆ Adoption of teak-based agroforestry systems expected to provide an investment strategy for resource poor farmers, and minimize risks through crop diversification and reduced periods during which farmers are not deriving any income or food from land planted with teak.
- ◆ Possibility of new opportunities for timber processing and value-adding in the province.

